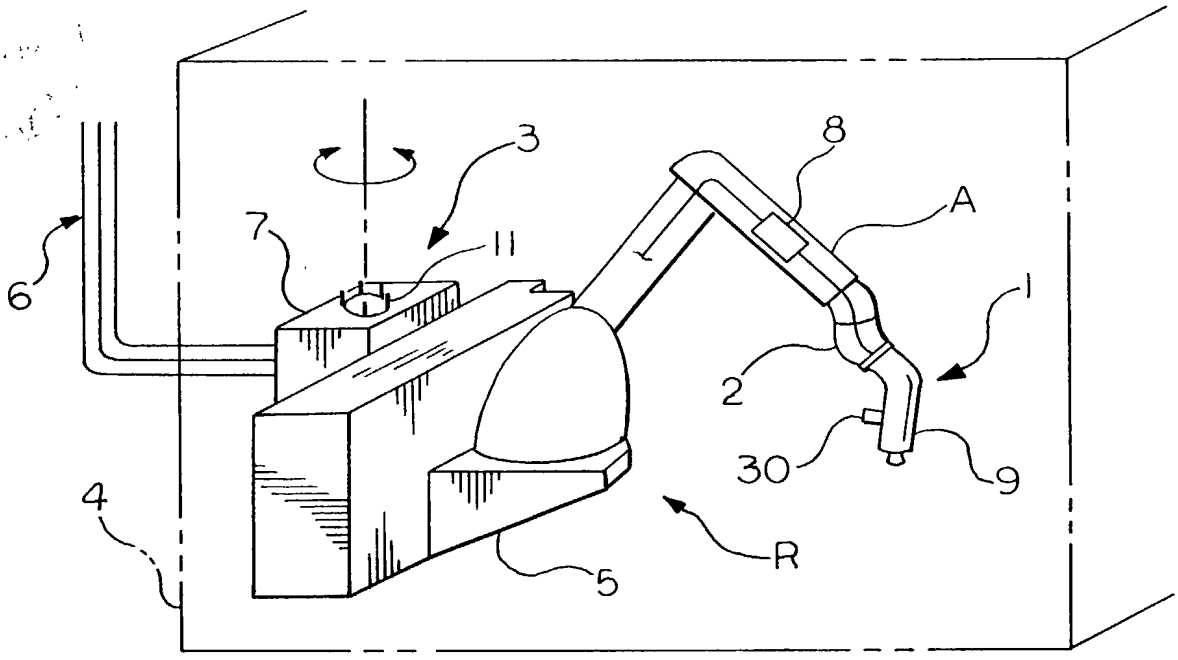


FIG. 1

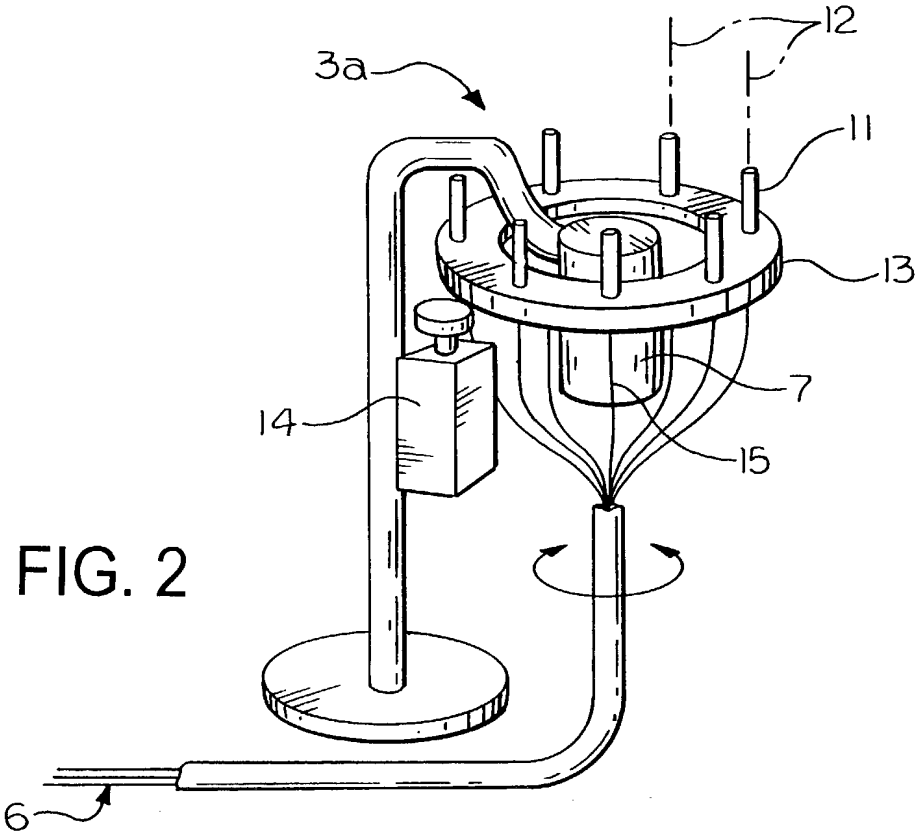


FIG. 2

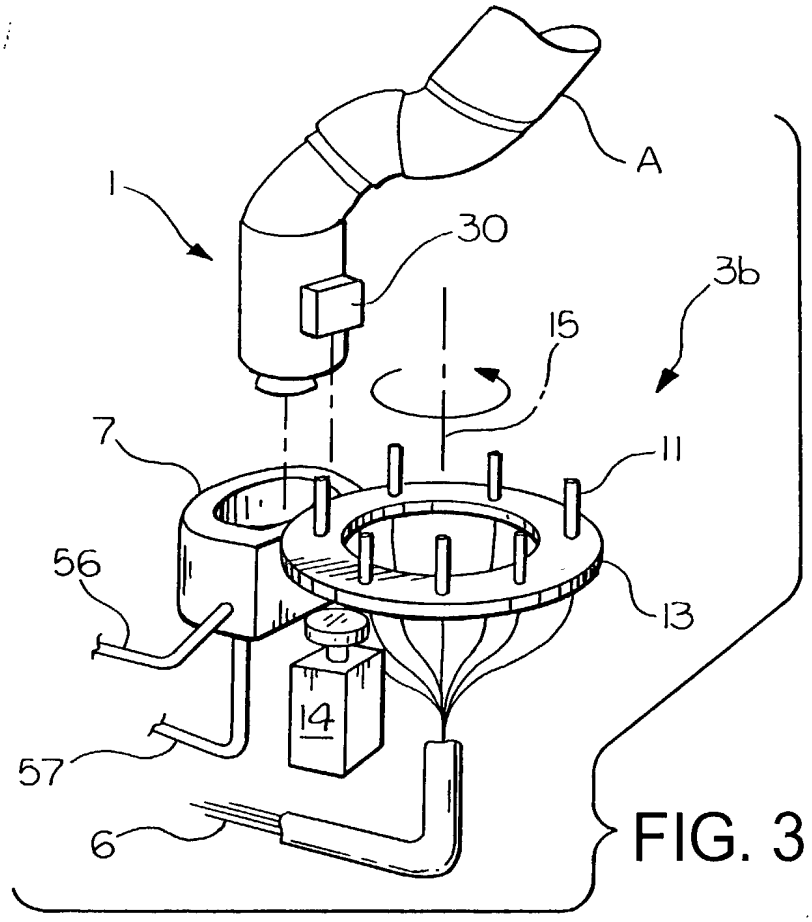


FIG. 3

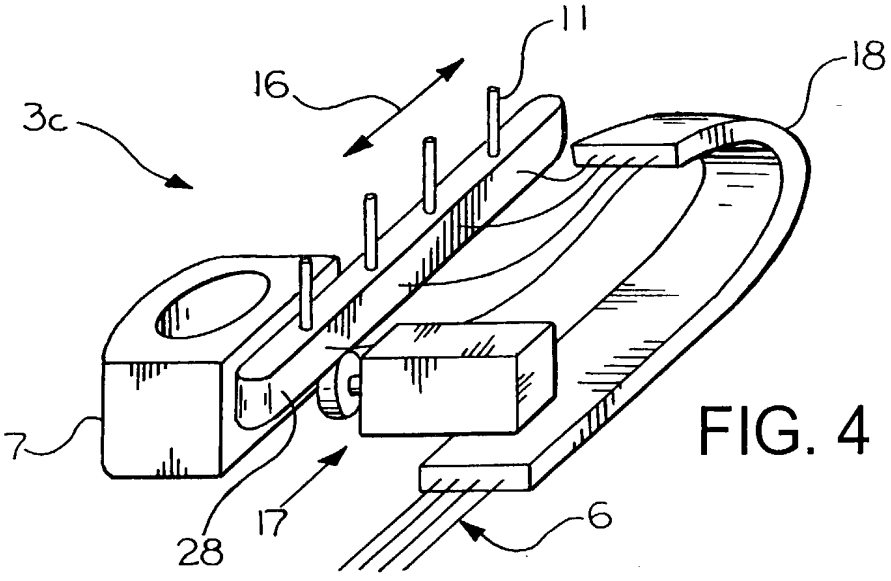


FIG. 4

2000-05-26 18:39:02

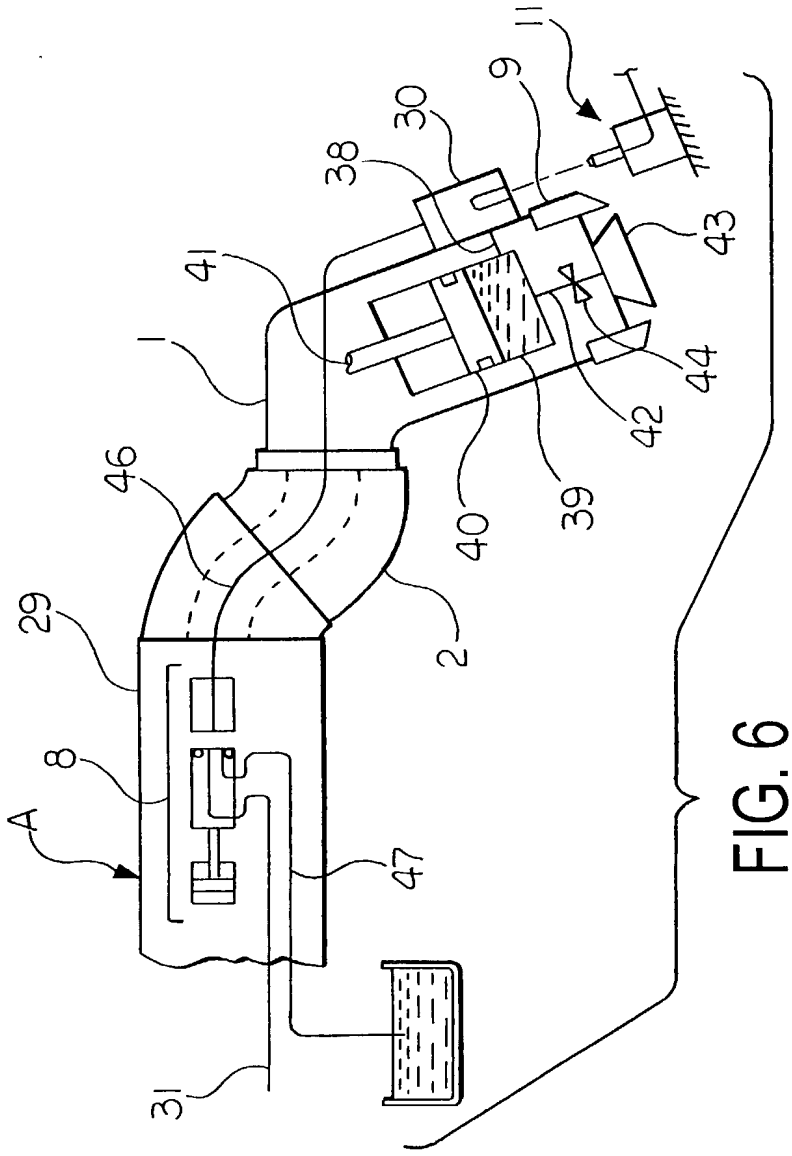


FIG. 6

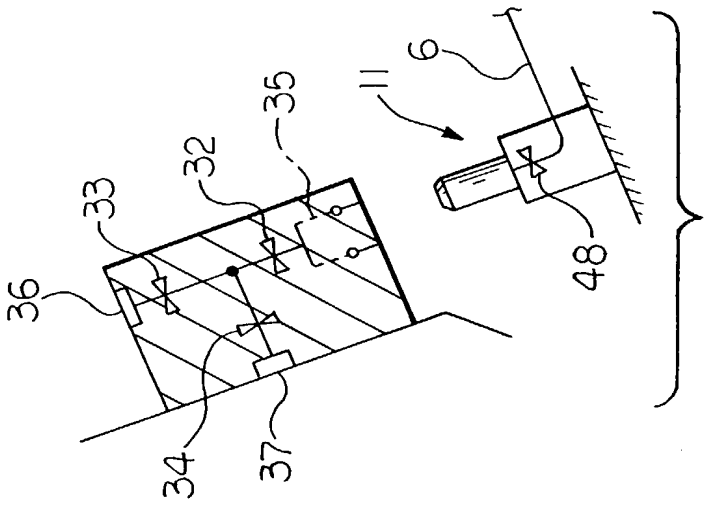


FIG. 5

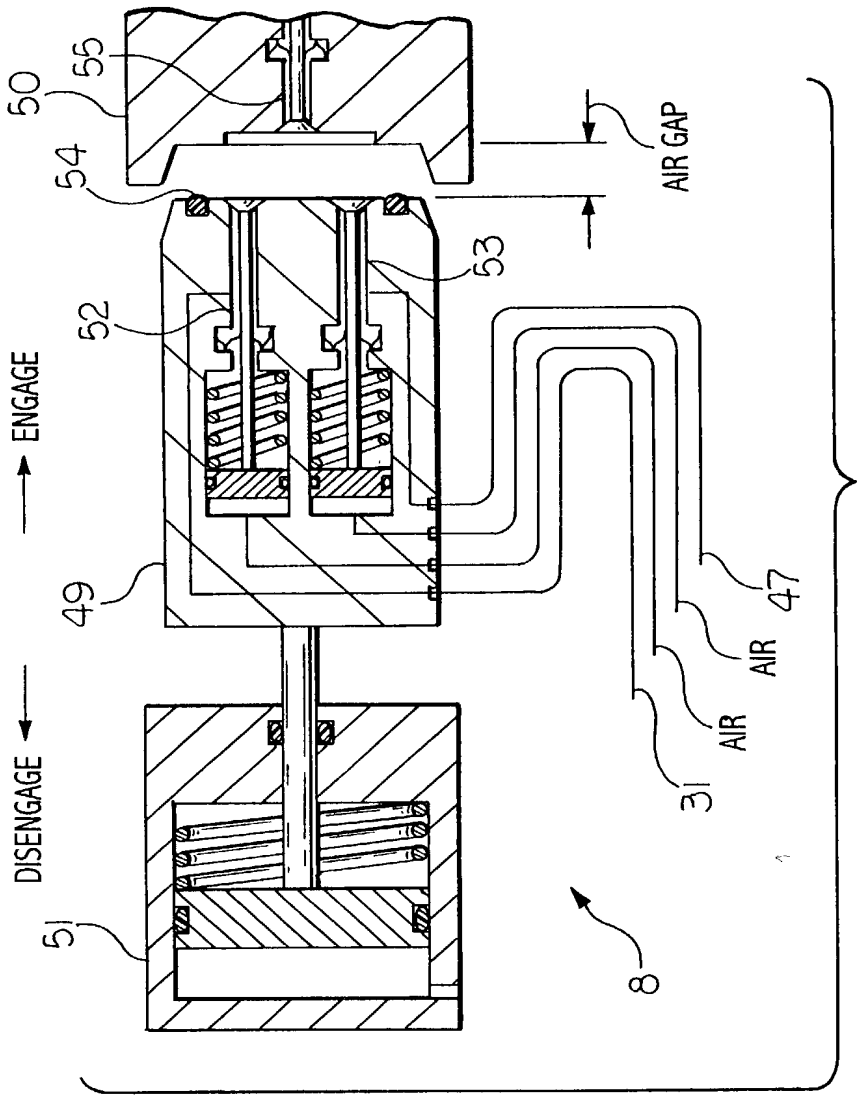
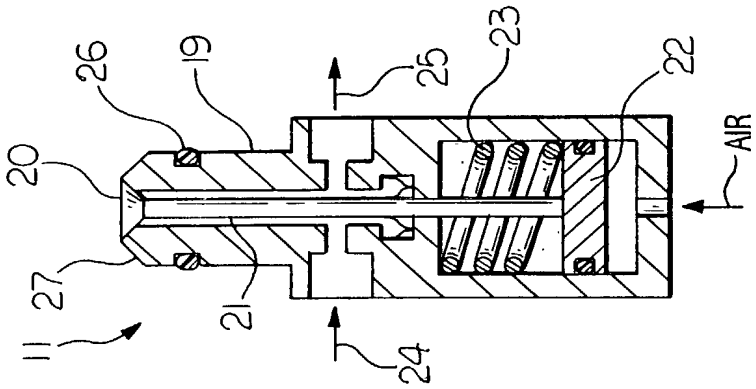

50
56
54
AIR GAP
53
52
ENGAGE
49
47
AIR
AIR
31
DISENGAGE
51
8

FIG. 8


26
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25
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22
20
AIR
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21
11
24

FIG. 7

PROCESS STEP	DESCRIPTION	VALVE STATE									DOCKING POSITION	PISTON POSITION
		8	52	53	55	32	33	34	44	48		
A	FINISHED PAINTING GREEN										REMOTE	AT BOTTOM
B	CLEAN PISTON FACE AND BELL CUP, INDEX INJECTOR	ON	ON		ON		ON	ON	ON		REMOTE	OSCILLATE NEAR BOTTOM
C	DOCK WITH PAINT SUPPLY										DOCKED	AT BOTTOM
D	PRIME LINES WITH RED PAINT					ON		ON	ON	ON	DOCKED	AT BOTTOM
E	FILL CANISTER WITH RED PAINT					ON		ON		ON	DOCKED	RETRACTING
F	LEAVE DOCK & CLEAN INJECTOR	ON	ON		ON	ON	ON				NEAR	AT TOP
G	CLEAN CONTROL VALVE FACE	ON	ON	ON							REMOTE	AT TOP
H	PAINT WITH RED								ON / OFF		REMOTE	DISPENSE

FIG. 9

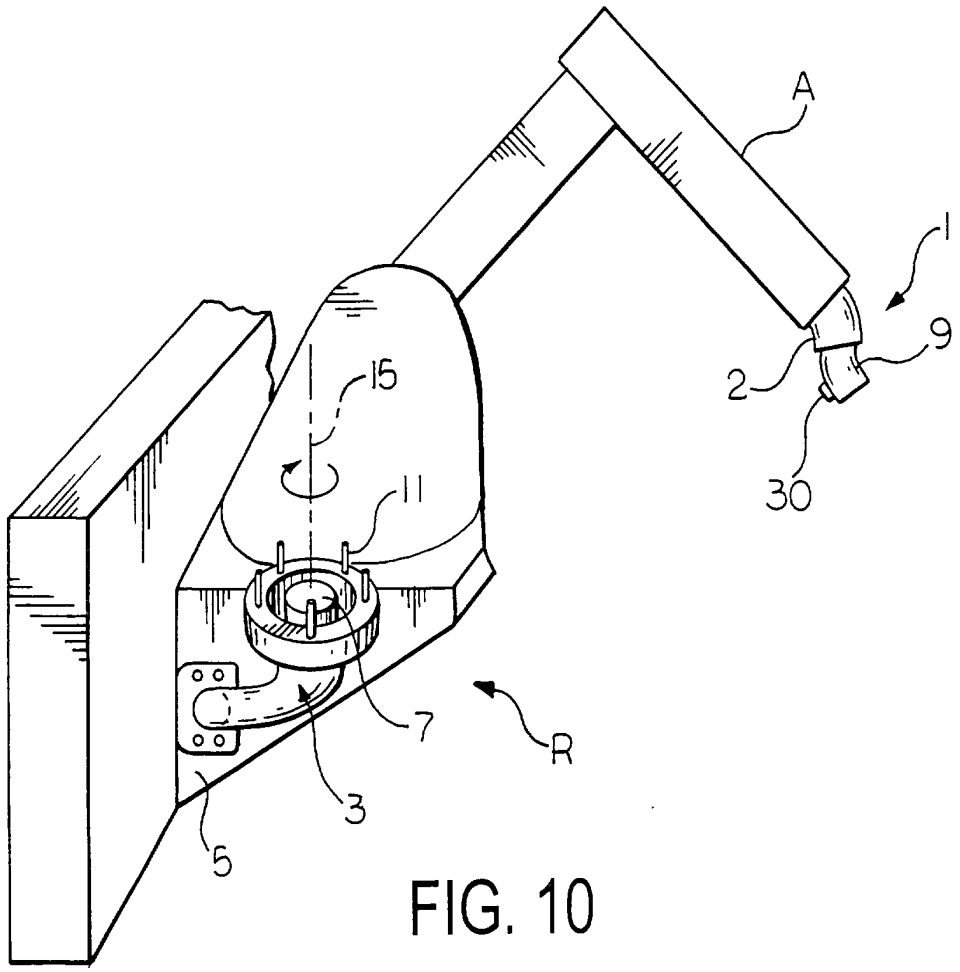


FIG. 10

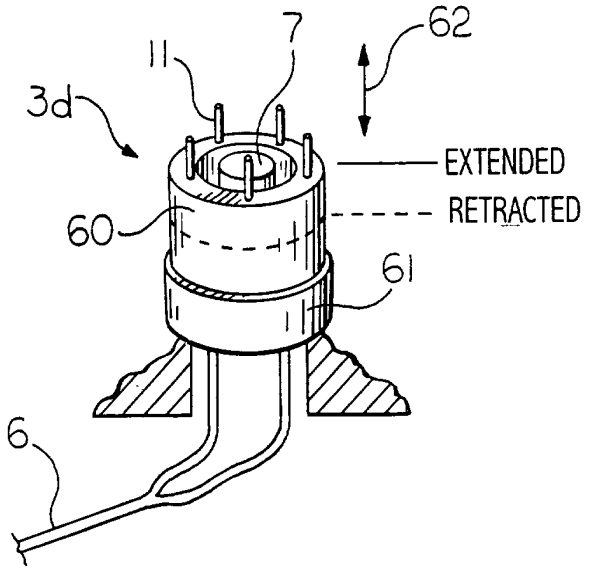


FIG. 11

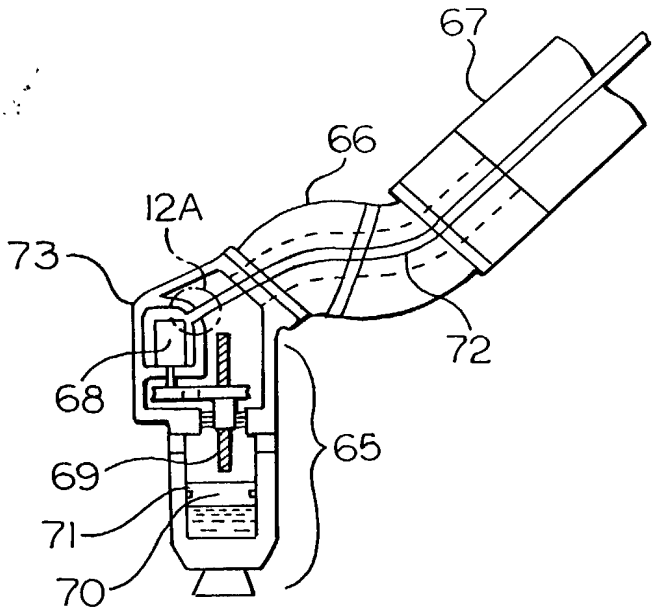


FIG. 12

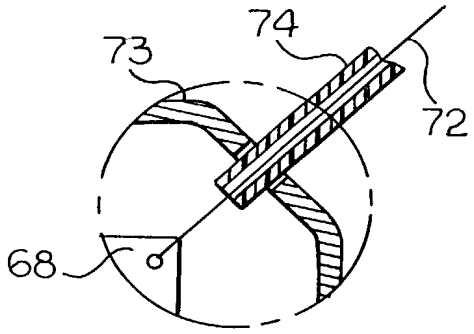


FIG. 12A

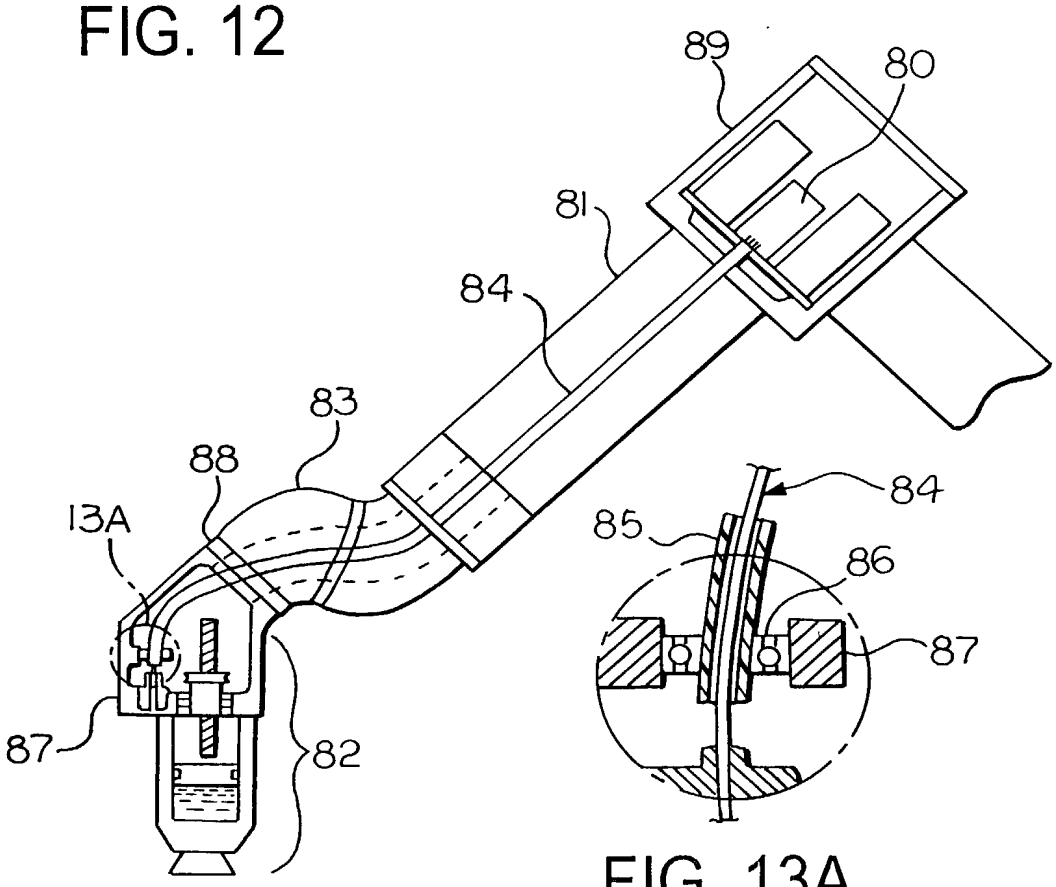
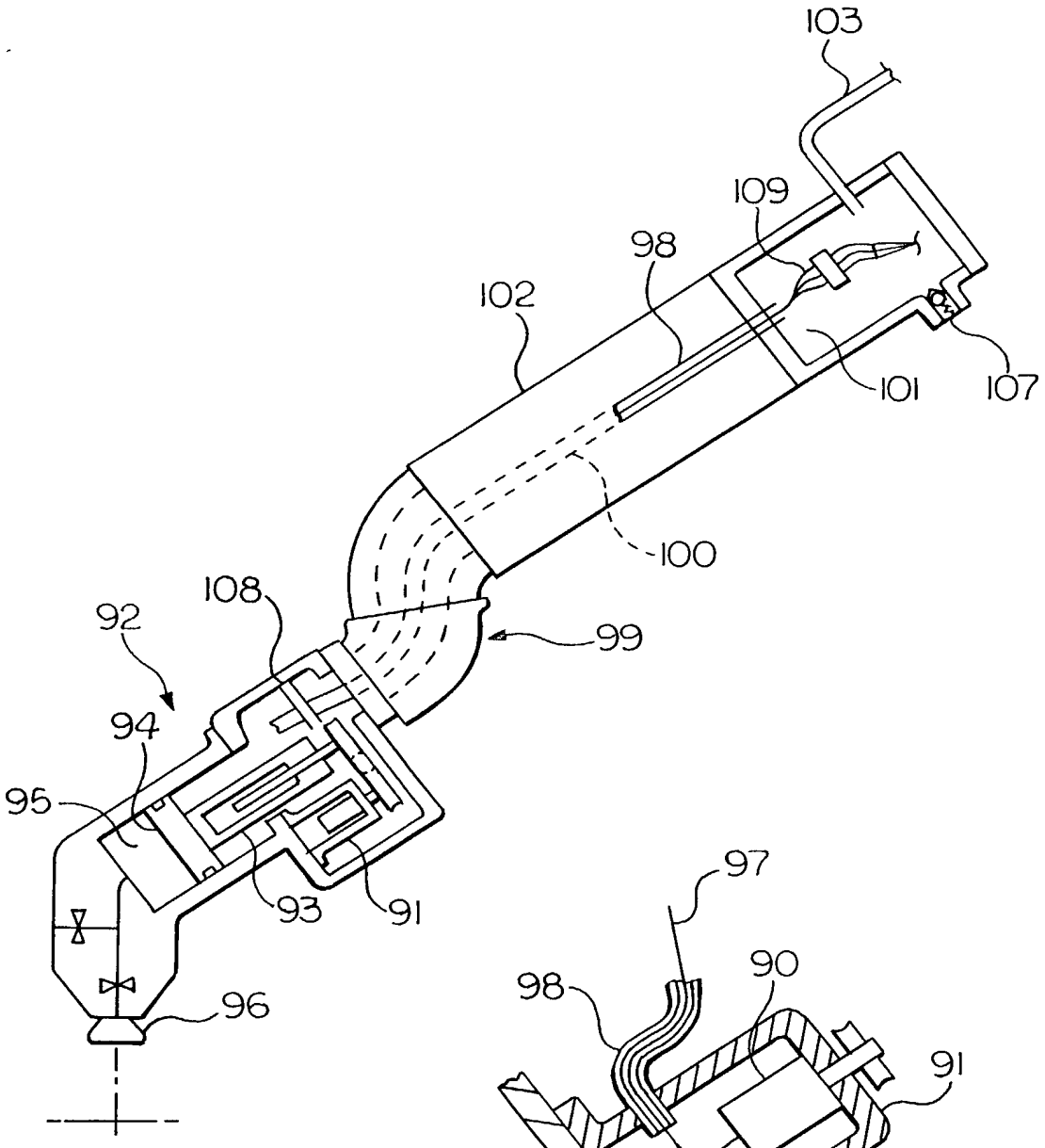


FIG. 13

FIG. 13A


103
109
98
102
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107
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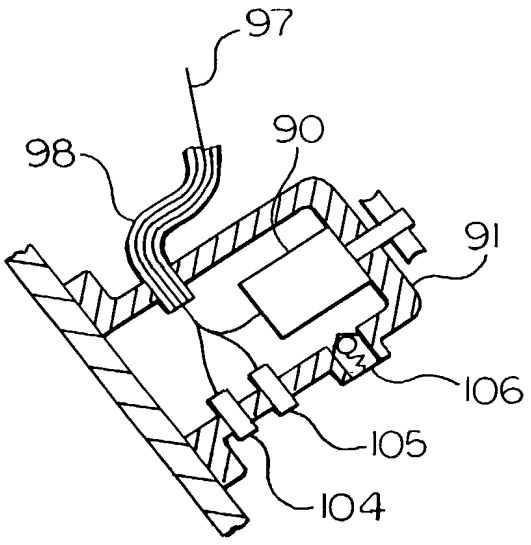
91
96

FIG. 14


97
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91
106
105
104

FIG. 15

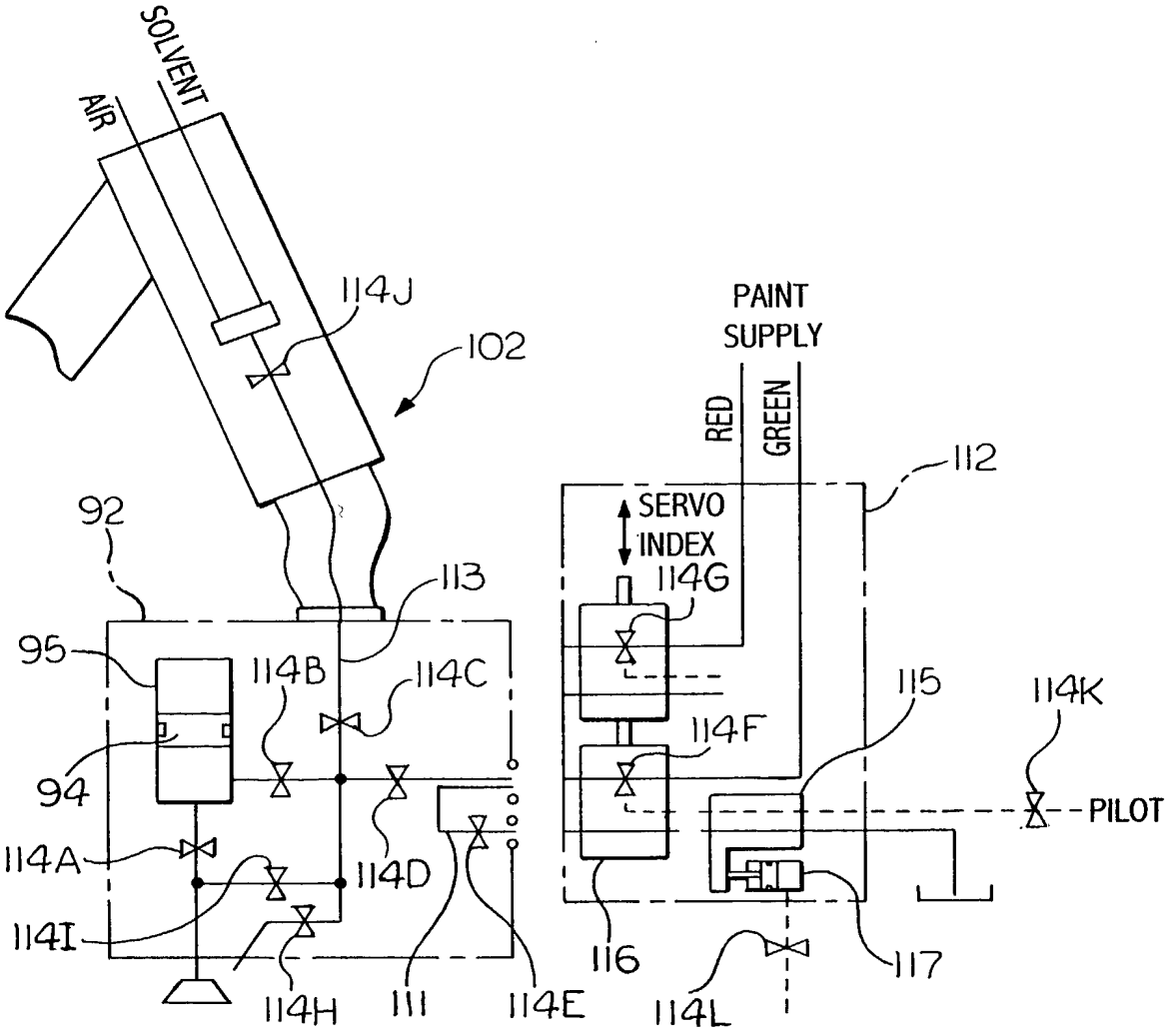
SOLVENT
AIR
114J
102
PAINT
SUPPLY
RED
GREEN
112
92
SERVO
INDEX
114G
113
95
114B
114C
115
114K
114F
94
PILOT
114A
114D
114I
116
117
114H
111
114E
114L

FIG. 16

FIG. 17

PROCESS SEQUENCE - CHANGING COLOR	DOCKED	VALVE											
		A	B	C	D	E	F	G	H	I	J	K	L
DONE PAINTING RED	NO												
CLEAN PISTON FACE & INSIDE BELL CUP	NO	ON	ON	ON							ON		
CLEAN OUTSIDE OF BELL	YES/NO			ON					ON		ON		
INDEX TO GREEN SUPPLY	YES/NO	VALVE POSITION N/A (CAN BE PARALLEL PROCESS)											
CLEAN SHROUD	YES	VALVE POSITION N/A (CAN BE PARALLEL PROCESS)											
PRIME LINES WITH GREEN	YES	ON	ON		ON		ON					ON	ON
FILL CAN WITH GREEN	YES		ON		ON		ON					ON	ON
CLEAN & DRY DOCKING INTERFACE	YES			ON	ON	ON					ON		ON
CONTINUE DRYING	NO			ON	ON	ON					ON		
PAINT WITH GREEN	NO	ON											

FIG. 18

PROCESS SEQUENCE – REFILLING SAME COLOR	DOCKED	VALVE											
		A	B	C	D	E	F	G	H	I	J	K	L
DONE PAINTING RED	NO												
CLEAN INSIDE & OUTSIDE OF BELL	YES/NO			ON					ON	ON	ON		
CLEAN SHROUD	YES	VALVE POSITION N/A (CAN BE PARALLEL PROCESS)											
PRIME LINES WITH RED	YES	ON	ON		ON		ON					ON	ON
FILL CAN WITH RED	YES		ON		ON							ON	ON
CLEAN & DRY DOCKING INTERFACE	YES			ON	ON	ON					ON		ON
CONTINUE DRYING	NO			ON	ON	ON					ON		
PAINT WITH RED	NO	ON											

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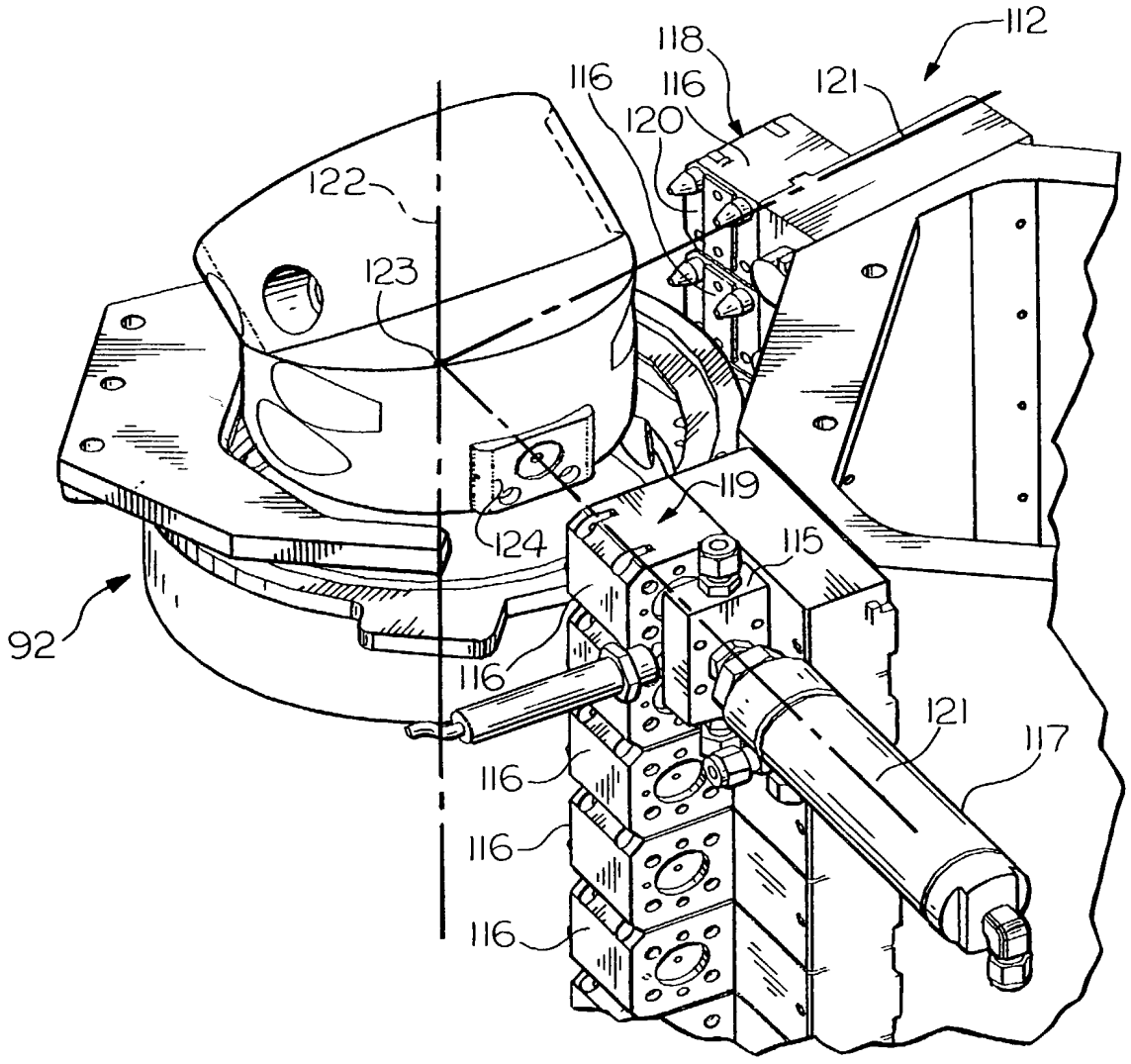

FIG. 19

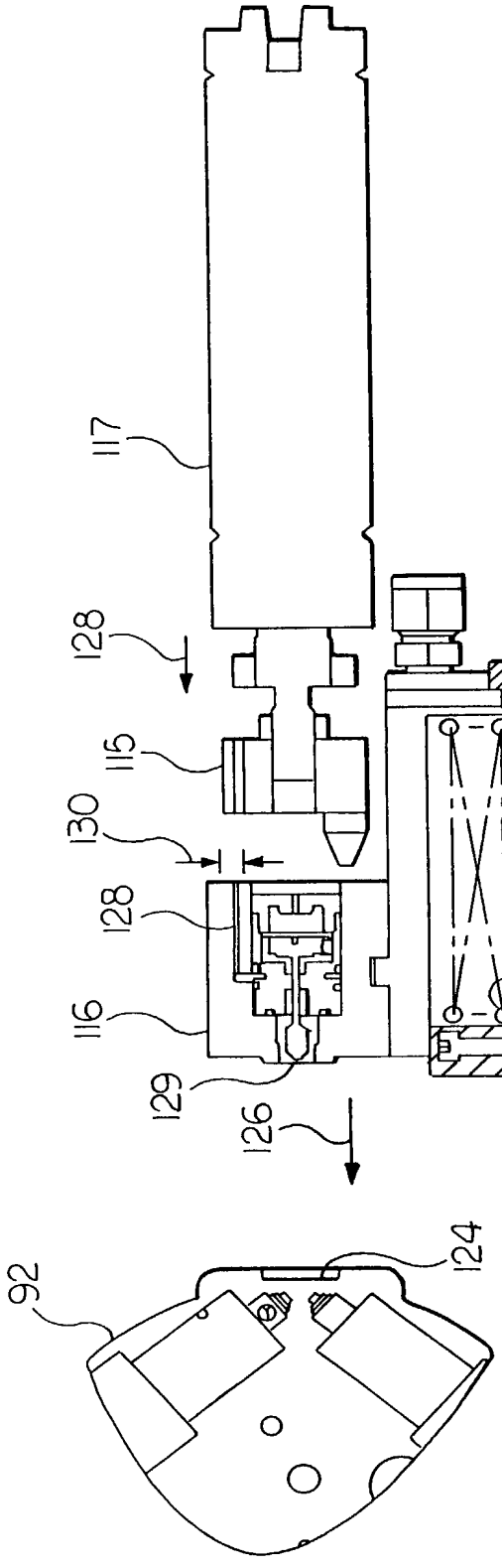

FIG. 20